UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/738,431	12/17/2003	Gregory L. Slaughter	VRTS0377	8069

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EXAMINER
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ART UNIT	PAPER NUMBER
2619	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/738,431	SLAUGHTER ET AL.
	Examiner	Art Unit	
	ANTHONY SOL	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>27 March 2008</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1,3-19 and 21-29</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1,3-19 and 21-29</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
        application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Responsive to amendment of 3/27/2008 and supplemental to the action mailed 3/31/2008

- A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/27/2008 has been entered.

- No claims have been amended.

- Claims 1, 3-19, and 21-29 remain pending.

Claim Objections

1. Claims 1 and 19 are objected to because of the following informalities:

   For claim 1, there are typos as follows:

   - In line 1, the word "carrier" should be deleted as it was already amended to be deleted in the a previous amendment.

   - In line 5, a semicolon after "link" (i.e., link:) should be deleted.

   - In lines 10-11, the term $D_{j-x}, D_{j-x+l}, D_{j+l}, D_{j+2}, \ldots D_{j+x}$ should be $D_{j-x}, D_{j-x+l}, \ldots D_{j-l}, D_{j+l}, D_{j+2}, \ldots D_{j+x}$.

   For claim 19, there is a typo as follows:

   - In line 10, there is a period after the word "subset" (i.e., subset.) that

should be deleted.

Please see the Applicant's amendment filed 10/22/2007, which do not contain the typos identified above, and which the current version of the claims should be identical to since the Applicant did not intend to amend any claims.

Appropriate corrections are required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3-19, and 21-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pub. No. US 2005/0086469 A1 ("Dunagan") and Pub. No. US 2004/0054807 A1 ("Harvey") in view of U.S. Patent No. 6,282,170 B1 ("Bentall").

Note: Dunagan incorporates by reference in its entirety the commonly assigned U.S. Patent application Ser. No. 10/356,961 which is published as US 2004/0054807 A1 (see Dunagan, para. 58).

Regarding claims 1, 18, and 19,

Harvey shows in fig. 9 determining an ordering for a plurality of N nodes such that the nodes are circularly ordered as nodes D_0, D_1, D_2, ... D_{N-1} and that each node D_i in the plurality of nodes establishing a link to X other nodes chosen as nodes D_{i+1}, D_{i+2}, ... D_{i+x}, wrapping to Do if necessary.

Dunagan discloses that each node D_j in at least a subset of the plurality of nodes establishing a link with one or more additional chosen nodes not in the set D_{j-x}, D_{j-x+1}, ... D_{j-1}, D_{j+1}, D_{j+2}, ... D_{j+x} (paras. 71, 72, *Node A picks a random entry from its routing table and sends the indicated node the subscription request*).

Dunagan and Harvey do not disclose that for each node D_j in the at least the subset, each node in the set D_{j-x}, D_{j-x+1}, ... D_{j-1}, D_{j+1}, D_{j+2}, ... D_{j+x} establishing a link with the one or more additional nodes chosen by the node D_j.

Bentall shows in fig. 23 node 152 establishing a link with node 155, and nodes 151 and 153 also establishing a connection with node 155.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the fault tolerant notification method of Dunagan and Harvey with restoration path method as discloses by Bentall. One skilled in the art would have been motivated to make the combination to set up a new virtual path to avoid the failed-part (Bentall, col. 8, lines 28-33).

Regarding claims 3, 4, 21 and 22,

Dunagan and Harvey do not disclose that for each node D_j in the at least the subset establishing a link with one or more additional chosen nodes not in the set D_{j-x},

$D_{j-x+l}, \dots D_{j-l}, D_{j+l}, D_{j+2}, \dots D_{j+x}$ comprises each node D_j in the at least the subset

establishing a link with one or more randomly chosen nodes not in the set $D_{j-x}, D_{j-x+l}, \dots$

$D_{j-l}, D_{j+l}, D_{j+2}, \dots D_{j+x}$.

Bentall shows in fig. 23 node 152 establishing a link with node 155, and nodes

151 and 153 also establishing a connection with node 155.

It would have been *prima facie* obvious to one of ordinary skill in the art at the

time of the invention was made to modify the fault tolerant notification method of

Dunagan and Harvey with restoration path method as discloses by Bentall. One skilled

in the art would have been motivated to make the combination to set up a new virtual

path to avoid the failed-part (Bentall, col. 8, lines 28-33).

Regarding claims 5 and 23,

Dunagan discloses an event notification service that operates as a peer-to-peer

messaging system (para. 50).

Regarding claim 6,

Harvey shows in fig. 9 that nodes are circularly ordered.

Regarding claims 7 and 24,

Harvey shows in fig. 9 that the subset includes nodes whose position in the

ordering is a multiple of 2X. For example if X=1, the routing table of node A shows for

level 1 the next hop nodes are M and X.

Regarding claims 8 and 25,

Harvey shows in fig. 9, an 8 node example where X=1 is at least eighty percent smaller than N=8.

Regarding claims 9 and 26,

Dunagan shows in fig. 2b a node ID 206.

Dunagan discloses that once a node has been assigned its name ID and numeric ID, the set of routing table pointers it may choose is deterministic (para. 117).

Regarding claim 10,

Dunagan shows in fig. 2b a node ID 206.

Dunagan discloses that once a node has been assigned its name ID and numeric ID, the set of routing table pointers it may choose is deterministic (para. 117).

Harvey shows in fig. 9, nodes ordered by name ID, but it is within the capability of one skilled in the art to provide an example with nodes D_0, D_1, ... D_{N-1} given that Dunagan shows a node ID 206 in fig. 2b.

Regarding claims 11 and 27,

Harvey discloses that virtual nodes that can be associated with a single physical network node (paras. 125-126).

Regarding claim 12,

Dunagan discloses that event notification can be transmitted in UDP or TCP

(para. 50).

Regarding claims 13 and 28,

Dunagan shows in fig. 1a logical connections that includes a local area network

(LAN) 171 (para. 46).

Regarding claims 14 and 29,

Dunagan discloses that each node D_j in at least a subset of the plurality of nodes

establishing a link with one or more additional chosen nodes not in the set D_{j-x}, D_{j-x+1}, ...

D_{j-1}, D_{j+1}, D_{j+2}, ... D_{j+x} (paras. 71, 72, *Node A picks a random entry from its routing table*

and sends the indicated node the subscription request).

Regarding claims 15 and 16,

Harvey discloses that the overall search efficiency is O(log n) (paras. 74, 85).

Regarding claim 17,

Harvey shows in fig. 9 determining an ordering for a plurality of N nodes such

that the nodes are circularly ordered as nodes D_0, D_1, D_2, ... D_{N-1} and that each node D_i

in the plurality of nodes establishing a link to X other nodes chosen as nodes D_{i+1}, D_{i+2},

... D_{i+x}, wrapping to Do if necessary.

Dunagan discloses that for each node D_j in at least a subset of the plurality of nodes the node D_j establishing a link with one or more randomly chosen nodes not in the set D_{j-x}, D_{j-x+l}, ... D_{j-l}, D_{j+l}, D_{j+2}, ... D_{j+x} (paras. 71, 72, *Node A picks a random entry from its routing table and sends the indicated node the subscription request*).

Dunagan and Harvey do not disclose that each node in the set D_{j-x}, D_{j-x+l}, ... D_{j-l}, D_{j+l}, D_{j+2}, ... D_{j+x} establishing a link with the one or more nodes randomly chosen by the node D_j.

Bentall shows in fig. 23 node 152 establishing a link with node 155, and nodes 151 and 153 also establishing a connection with node 155.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the fault tolerant notification method of Dunagan and Harvey with restoration path method as discloses by Bentall. One skilled in the art would have been motivated to make the combination to set up a new virtual path to avoid the failed-part (Bentall, col. 8, lines 28-33).

Response to Arguments

4. Applicant's arguments filed 3/27/2008 have been fully considered but they are not persuasive.

-    The Applicant argues on pg.11 of the Remarks regarding claim 1 that a SkipNet is not equivalent to the overlay network taught by the Applicants and therefore the Harvey reference does not teach or suggest the claim limitation.

- In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the feature upon which applicant relie (i.e., overlay network) is not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Even *in arguendo* that the claim did recite an overlay network, Harvey does disclose an overlay network as evidenced by the title, "System and Method for Creating Improved Overlay Network with an Efficient Distributed Data Structure." Furthermore, the abstract discloses, "A system and method for using skip nets to build and maintain overlay networks for peer-to-peer systems. Still further, Harvey discloses overlay nodes in at least para. 163 in describing fig. 9.

- The Applicant further argues on pg. 11 of the Remarks that in fig. 9, the first node establishes links with nodes that are 2^h nodes away from the first node for each level h, which the Applicant contends does not equate to the first node establishing links within X nodes to the right and left in a circular ordering.

- The Applicant respectfully disagrees. The SkipNet of Harvey in fig. 9 allows for h=0 as depicted in fig. 10, in which case level L=0 and corresponds to the ring in the bottom of fig. 10, wherein the first node does establish links with X nodes to the right and left in a circular ring.

- The Applicant still further argues on pg. 12 of the Remarks that the Dunagan reference at para. 71-72 does not teach the claimed limitation that node Dj establishes links with nodes where the links are not already established.

- The Examiner respectfully disagrees. Dunagan discloses that "Alternatively, when an external client wishes to subscribe to a topic owned by <u>another</u> <u>organization</u>, e.g. Organization B, the client <u>sends a subscription request</u> to a <u>well-known node</u> in Organization B. The client can determine the IP address of the well-known node using a name service, and send the subscription request message using the network routing layer underlying the <u>overlay network</u>. The name service records one or several "well-known" nodes for each organization. The subscription request message is not modified, and is forwarded directly to Node B" (see Dunagan, para. 72). It is clear that the "well-known node" in Organization B is not already linked to Node A since the IP address must be first determined.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY SOL whose telephone number is (571)272-5949. The examiner can normally be reached on M-F 7:30am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

/A. S./
Examiner, Art Unit 2619
5/21/2008

/Wing F. Chan/
Supervisory Patent Examiner, Art Unit 2619
5/19/08